Consultation of Member States on the Circular Economy

The Commission will put forward a new initiative on the circular economy by the end of 2015. This initiative will comprise a revised proposal on waste, as well as an action plan addressing the circular economy throughout the value chain.

Public consultations on the review of EU waste targets and on the sustainability of the food system took place in 2013. A public consultation is ongoing until 20 August 2015 to cover other issues relating to the transition to a circular economy, including how to address the different parts of the economic cycle (e.g. production and consumption phases) as well as enabling framework conditions, such as innovation and investments. A separate consultation on waste market distortions is also ongoing until 4 September.

Member States are encouraged to participate to the ongoing public consultations in order to share their views regarding measures that could be taken at EU level to promote the circular economy. However, given the specific experience that many Member States have in implementing measures on their national territories, or encountering barriers to the circular economy, as well as their technical expertise regarding waste management, the Commission would like to specifically consult Member States on the questions set out below.

In light of the cross-cutting nature of the issues at stake, Member States are encouraged to develop their answers through an inclusive and coordinated approach, involving various departments and in particular those in charge of environmental and economic affairs.

Contributions should be sent before 10 September to ENV-GROW-CIRCULAR-ECONOMY@ec.europa.eu

Part 1 – Circular economy measures

- **Have you encountered specific barriers in your country to the establishment of a more circular economy? Can you describe these main barriers?**

The Netherlands welcomes the opportunity to play a supportive role for the Commission in its work on developing its circular economy proposal. Before the summer we published the non-papers 'Further proposals for a new Circular Economy Package' and "NL suggestions for the Commission's revision of the Waste package - the concept of 'waste' and in the enclosed paper – "Reduction of food waste" (see attachments 1-4). Although this third consultation serves to support the Commission's thinking on the new circular economy package, the Netherlands reserves the right to reconsider its position once the Commission's new proposal is published, thereby taking into account the accompanying Impact Assessment and possible assessments at national level.

In our earlier consultations we made the remark that there is a strong connection the Bioeconomy strategy and a Circular Economy – package and that this connection must be made on a European policy level. In this consultation we speak about a circular economy when we think of a circular and biobased economy.

To capture the opportunities within Europe as described for instance in the report 'Growth Within: a circular economy vision for a competitive Europe'[1], a different speed' resource approach for Europe needs to be designed to meet member states were they are. In this consultation we are envisioning such an approach.

In The Netherlands we distinguish three levels in the transition towards a circular economy (linear economy, linear economy with feedback, circular economy). Each level builds on the previous one and has its own strengths and weaknesses (linear: upscaling/resource intense, linear with feedback: mitigation/a-symmetric power relations, circular: multiple value creation/unpredictability). Each level has four transition phases (development, start-up, acceleration, stabilisation) and has its own corresponding policy tools and government roles and requires a different set of instruments.

Evolving from a linear economy, to a linear economy with feedback, we are now on the onset of a transition to a circular economy.

A circular economy, other than linear economy (with feedback) can be characterised by the following developments:

- Sustainability as the preconditional mind-set (inclusive system-thinking to progress Sustainable Development Goals).
- Ambitious coalitions with hybrid governance structures, through which public, private and societal partners create new business (eco)systems[2].
- The number and distribution of materials **locally and globally** will increase substantially by turning 'waste' into new inputs, and by using biobased materials.
- Downward and increasingly upward cascading of materials to dramatically increase society's resource effectivity.
- The emergence of global-local industrial production networks, linking resource niches and markets across the globe through ICT. These networks will disrupt

[1] : See http://www.ellenmacarthurfoundation.org/news/latest-research-reveals-more-growth-jobs-and-competitiveness-with-a-circular-economy

[2] Wikipedia: "An economic community supported by a foundation of interacting organizations and individuals—the organisms of the business world. The economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders. Over time, they coevolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies. Those companies holding leadership roles may change over time, but the function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments, and to find mutually supportive roles."[I]

current supply chains with its ‘step-by-step complexity’ (from raw material to semi- to final product/service), by skipping multiple steps of supply chains as well as integrating multiple steps of multiple supply chains simultaneously (‘non-linear complexity’). In the latter also consumers become producers (‘prosumers’).
- The inclusion of biodiversity & ecosystem services (‘natural capital’) as preconditions for a sustained supply of raw materials entering the economy. Even though in the beginning of the transition this may require a sustainable mix of fossil based and biobased resources together with the decarbonization of energy supply.

With these characteristic of circular economy in mind the following policies at the national / EU level need to be reviewed:

- **Innovation**:
  - A multitude of material-, production- and process and social innovations are needed to create consciously guided, crosssectoral system innovation. To achieve this, larger and smaller strategic public-private partnerships, including large as well as small and medium sized frontrunner enterprises, are needed.
  - Active support by governments to implement results of innovation policy can be frustrated by own institutional frameworks (f.e. procurement, state aid rules, rigid standard setting).

- **Competition**: Governments facilitate and participate in ambitious coalitions with private and societal partners and deliberately accelerate certain aspects of the transition towards a circular economy. To do so governments may find themselves violating the European competition framework in looking for a preferential treatment of circular and biobased cases as being unequal cases in relation to a linear, unsustainable economy.

- **Trade**:
  - Sustainability will become an increasingly important theme within conflict resolution mechanisms (f.e. discussions around TTIP).
  - As international transport of ‘waste’ and renewable resources will increase (f.e. North Sea Resource Roundabout), current regulatory arrangements potentially hamper the occurrence of new markets.
  - Upscale markets for repairing, restore, refurbishing, reusing products and materials within Europe with supportive recycling- and retrieving infrastructure cannot as yet compete with the low prices of ‘virgin’ products and materials and resource hunger of industrialising countries (f.e. case of Thermphos versus possible European exploitation of Tasman rare earths mine).
- **Public risk management**: A primary role of government is to protect public interests such as health, safety and environment. Consciously transitioning towards a circular economy raises the question how governments can protect public interests in a circular

economy (i.e. with new inspection and detection methods using innovative ICT and data mining applications for efficient and selective intervention).

European countries can be distinguished on basis of their individual state-of-play in the transition from a linear to a circular economy. Based on the above described characteristics and consequences for policy, some of the key barriers for the successful transition towards a circular economy are described below. First some general notions, second the barriers are ordered by the tree levels of transition.

General pre-conditions:

- *Adaptive and flexible policymaking during the transition is needed*: Within Europe, differences in the level and maturity of the transition towards a circular economy exist. Current EU policy tools are not integrated from a ‘different speed’ resource approach. This makes it hard to work on systems innovations throughout Europe, which require long term visioning and active involvement from multiple stakeholders. This hampers the transition to a circular economy, or at least the speeding-up of such transition.
- *Integrated and cohesive knowledge infrastructure is needed*: The field of resource policy on national and European level is still fragmented into different domains (resilience of eco-systems and functions, resource dependency, resource efficiency, circular economy, biobased economy) with their ‘own’ departments, own networks, perspectives, methods and policy instruments. To create a ‘different speed’ resource approach, conceptual and measurement integration is necessary to take precise and effective measures.
- *Re-activating solidified intelligence within ‘stranded’ assets*: At every phase so called ‘stranded’ assets can emerge because of shifts in the techno-economic infrastructure. Engineering ingenuity is needed to transform these assets into building blocks of the next phase. Without transition focused (private-public) programs to transform them, the creative destruction of markets will be fought off by the potential ‘losers’ by protecting their vested interests through governmental and political channels. These dynamics considerably slow down the speed of the transition towards a circular economy.

Key-barriers in linear economy without feedback:

- *System-thinking is lacking* ("no chains, only links"): Production and consumption patterns are based on optimizing and maximizing within their own domains, inhibiting the formation of supply chains and creates a 'take-make-waste' mind-set leading to negative effects.
- *Environmental ‘hygiene’ through elimination not transformation*: The need to aboard unwanted by- and rest materials (f.e. health and land availability issues), combined with an efficiency mind-set, created waste incinerations aimed at eliminating materials without consciously engineered industrial symbiosis (f.e. energy- and material recovery).
- *No real EU internal waste market*: Because of the slow pace of implementation of the waste acquis and the differences between member states in the use of waste

definitions, detection and inspection methods and customs routines a real EU waste market isn't realised yet. This means 'economies of scale' within the EU are dampened and deters large investors.

- *Ignoring the importance of maintaining natural capital*. While effectively priority is given to handling abiotic resources that have entered the economy (recycling, waste), little attention is being paid to the need to preserve and sustainably use ecosystem services and safeguard valuable biotic resources, notably fertile soils, climate regulation & resilience, pollination and pest control.

<u>Key-barriers in linear economy with feedback:</u>

- *Global producers, national consumers*. Global dispersment of the different steps of supply chains, makes downward cascading challenging as multiple (national) borders are crossed. As downward cascading implies the re-use of materials, trust is the crucial ingredient to compensate for the powerful loss-aversive inclination in people."Moreover, products and processes have as yet not been designed to enable full recovery of the materials used without loss of material integrity. The (cultural) status of the secondary resources (used goods, residues, waste) burdens the retrieved or recycled products with a negative image (perceived image of being polluted). Cultural boundaries become a pre-condition to create business models in which cascading principles are used. Therefore most "chain" approaches stay within national borders and represent one or just a few steps of a supply chain to achieve tangible results.
- *Integrating 'external' costs favours agent-based approaches*: Policies and methods focussing on 'negative effects' (f.e. LCA) and increasingly 'positive effects' (f.e. Social Return On Investment) of organisations, emphasize agent-based approaches. As with most phase 2 approaches, the systemic nature of the business activities generating these effects is considered pregiven and only the effects upon the rest of the system are under consideration. This generates (unintended) systemic inertia, which system based approaches try to overcome by designing mutually enforcing actor repertoires from a system's point of view.
- *Consumer creates biggest negative impact*: Growing corporate product responsibility helps to impose connections between links in the supply chains (system-responsibility) and brings down negative external effects considerably. In member states well advanced into phase 2 the consumer-phase continues to be one of the most environmentally burdensome link in the cycle.

<u>Key-barriers in circular economy:</u>

- *Uneven playing field for cross-sectoral innovations (including service business models which aim to replace products):* The sourcing of the needed biomass and a-biotic (meta)materials as well as the application of the generated multipurpose products will be mostly cross-sectoral and cover <u>several</u> sectors at the same time. This creates repeated sectoral 'border' problems caused by sector specific risk analysis (f.e. health, environmental, financial), administrative requirements (f.e. accounting rules, intellectual property), existing normalisation and certification schemes and risk-aversive attitudes within government and companies. This leads to unnecessary

administrative burdens and creates an uneven playing field for cross-sectoral innovations.

- *A genuine upward cascading policy ladder in combination with circular design of products and processes is lacking*: The systemic characteristic of supply chains to create step-by-step complexity with large inputs of energy and materials is not sustainable taking into account current ecological stresses and continuing growth of a more wealthy and demanding world population. A higher-order economic functioning able to restore ecosystems, aimed at creating abundance (f.e. energy-positive, CO2 as resource, harnessing quantum potentials, open source approaches) and driven by creativity and sustainability is needed. A linear economy (with feedback) stimulates an increasing variety of new material sources distributed throughout the economy. A circular economy can be kick-started by cascading 'waste' upwards to transforms it in new multipurpose products and therefore skipping multiple steps of current supply chains[3]. Upwards cascading implies creating new higher order functionalities using biomass and a-biotic (meta)materials. However, current waste legislation is based on the downward cascading of materials and reused 'waste' within sectoral boundaries. This is operationalised by using the ladders of Lansink, Moerman or the more recently proposed 'circularity ladder'. These ladders are aimed at making current (techno-economic) practices "less bad" but do not transform the way we produce and consume products. 'Upward' cascading currently means climbing back up the ladders of Lansink or Moerman (implying that the 'highest' level of upward cascading is 'prevention' and not creating a proposition with very high functionality) or creating a ladder based on multiple-added value for people, planet and profit (dependent on healthy markets and influenced by market policy interventions). A real upward cascading ladder[4] needs to be created to stimulate new ways of production as described above. At the moment we know some examples of upward cascading. It is possible that upward cascading is not possible in all fields or we may not know them yet with the knowledge of today.
- *Production and utility sites no longer form a solid basis for containment of public risk*: As production facilities drastically scale down in size, (industrial) sampling methods and publicly accessible laboratories become more widely available and ideas become the most constraining form of capital, the number of small scale entrepreneurs working across the globe will explode. Where current practices of containing public risk (f.e. through licensing, certification and normalisation processes, risk-based

[3] For instance, livestock manure and sewage sludge are rich resources for nutrients. Already, technologies have been developed to effectively extract specific nutrients and to produce high quality fertilizers, which can compete with industrial fertilizers. Further innovations lead to use of these nutrients in substrates for insects and algae, which in turn present sustainable opportunities for our food and feed production. Creating end-of-livestock manure- criteria for fertilizer materials in the Regulation (EC) nr. 2003/2003 or Directive nr. 91/676/EEC, will enable further innovation and trade in high value products made from animal manure.

[4] : Creating a upward cascading ladder means combining a) real world examples within business and science, and b) knowledge related to complexity as found in nature to provide a system level approach needed to think through policy actions. Promising concepts to operationalise an upward cascading ladder are (eco)exergy (amount of working energy of a 'system') and other methods from information theory to calculate the level of information being stored and processed.

inspection) are based on a known number of production and utility sites which constitute ‘legal entities’, an unknown and fast growing number of producers and ‘prosumers’ less ground-based and ‘legally unknown’ will emerge and engage in ‘down and uploading’ of new materials, products and ideas on the internet. As (a)biotic materials from numerous sources can be turned into products around the globe, enforcing sectoral norms which control public risks will become very challenging.

- **What are the most successful measures taken in your country, at national, regional, or local level to facilitate the transition to a circular economy? (These can include legislative initiatives, financial instruments such as taxation, support programmes, awareness campaigns, public procurement, etc.). Are there any particular lessons learned from these measures, and could they in your view be usefully replicated in other countries or regions?**

<u>Linear economy without feedback</u>:
A very effective measure to start the transition towards a circular economy is the introduction of landfill restrictions for waste streams for which better alternatives exist. In the Netherlands a ban on land filling of domestic waste was already set in the year 1993 and its introduction, in combination with minimum standards for waste streams, can still be seen as the corner stone for the success of the Dutch waste policies in the years that followed, resulting in recycling/reuse percentages of 80% averaged over all waste streams.

<u>Linear economy with feedback:</u>
Not a measure, but an attitude has been very important in NL: cooperation. This cooperation can be formalized in different ways. Core of these cooperation is the good use of the competences of the parties involved, bringing expected and unexpected parties together, and creation of commitment. Formalisation can be a good way to create agreement on the objectives, results and actions to be taken. Examples include flexible forms of Extended Producer Responsibility for separate waste collection schemes and mandatory sectoral recycling targets.

In the Netherlands the Green Deal approach has proven to be a very useful instrument to promote front-runners and to encourage multi-stakeholder alliances that are aimed at economic growth and at improving the environment. We have good experiences with public-private partnerships. In the Netherlands the so called ‘Green Deal approach’ has proven to be a very useful instrument to promote front-runners and to encourage multi-stakeholder alliances that are aimed at economic growth and at improving the environment.

Within the Dutch Industrial and Innovation Policy (‘Topsectorenbeleid’) a lot of innovation aimed at retrieving valuable resources from ‘waste’ (f.e. in agrofood industry) or re-use of by-products (f.i. chemical process industry) is financed.

Examples of successful cooperation in NL are:

- Covenant on the improvement of recycling: more and better. Partners are waste and recycling branches, covering a big part of the companies active in the field of waste management, recycling and production of secondary materials. Also the local governments responsible for separate waste collection are partners in the covenant. Most important benefit of the covenant is that companies and government work together on projects that aim for the improvement of recycling. The projects are part of a joint working program that is renewed every year.
- Close cooperation with municipalities on the transition to a circular economy for waste flows that are collected by these governments, municipal waste. In this cooperation a framework is agreed upon for the approach and a 10-year working program is started. Target is to minimize the residual waste fraction per capita from 242 kg in 2013 to 100 kg in 2020 with a further reduction the following 5 years. A joint program committee has been formed, financed by central government to improve waste separation, to prevent waste and to optimize material chains together with other chain partners.
- Chemical industry companies working together while connecting steps in their production processes and making these more sustainable by improved process technology.

- Specific chain agreements:
  - Plastics, with over 70 partners focusing on improving innovation and reduce negative impact of plastics.
  - In 2011 the 'Phosphorus Value Chain Agreement' was signed in the Netherlands. More than 20 companies, knowledge institutes, NGO's and the government agreed to create a sustainable market for recycled phosphorus within 2 years. This by turning the phosphorus problem into an opportunity: recovering and recycling phosphorus from waste streams and livestock manure to create new markets and solve water quality problems.
  - Packaging agreement between companies, local government and central government to finance and improve prevention and recycling of packaging waste, and to reduce litter. This is a 10 year agreement that focuses on good cooperation between the partners, improving innovation while gradually closing the circle for packaging material. Starting in 2013 there has been an increase in plastic recycling, a sustainable packaging institute is started that works on prevention with a yearly roadmap, beverage cartons collection is started for a 3 year period (2015-2017) and in 2016 a 2 year pilot for a refund system for small drinking bottles and cans is started nationwide.

Another example is our national program Smart Regulation for Green Growth, a government initiative that aims to remove the barriers to investment, that innovative entrepreneurs perceive from legislation and regulations. This multidisciplinary taskforce takes a bottom-up approach, collecting signals coming from companies and trying to find solutions in regulatory flexibility.

Besides this attitude, the process of making a program that links several aspects of the transition to a circular economy and the implementation of actions is necessary to make clear the direction you want to go to. This resulted in the program From waste to resources, which got a parliament wide support.

Within the program (and also before) a promising and successful instrument is the chain approach, projects on a material/product chain with the following steps taken:

- In cooperation with stakeholders make a joint vision.
- get agreement on the actions of each party to be taken.
- set up a governance.
- implementation of actions.

An example of coalition forming is the Realise Acceleration of Circular Economy coalition, a coalition between NGO's and government, implementing projects like on acceleration as on circular design[5], enlarging high value reuse, attacking obstacles for circular economy, communication, and accelerate introduction of circular principles in product chains.

Circular economy

In this stage the circular economy is still a pioneering effort. In the area of technological and organisational innovation which exceeds sectoral approaches, for instance, livestock manure and sewage sludge are rich resources for nutrients. Already, technologies have been developed to effectively extract rare metals and to produce high quality biobased fertilizers, which can compete with industrial (fossil based) fertilizers. Further innovations lead to use of these nutrients in substrates for insects and algae, which in turn present sustainable opportunities for our food and feed production. Some further examples in The Netherlands exist in the forms of R&D[6], smart industry applications such as the 3/4 D printing with living materials and in the field of biobased economy with examples such as artificial photosynthesis and 'waste' wood pyrolysis. New technologies (including artificial photosynthesis) are worked out (on the level of fundamental research) to valorise CO2 for energy storage and chemical building blocks and to decarbonize energy supplies by electrification of the chemical industry.

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[5] TU-Delft: "The term "circular economy" denotes an industrial system that is, by design and intention, restorative, using resources either in a bio-cycle or in a techno-cycle – with all technical resources designed for multiple use cycles, at high quality. It is considered as a more sustainable alternative to the current "linear economy" and has recently gained the attention of governments, NGO's, researchers and increasingly, large companies. Powered by renewable energy, a circular economy can be fully sustainable from an ecological perspective. From the viewpoint of business, it also holds promise, as value is maintained for longer and a zero-growth scenario is avoided. However, unlocking this potential requires shifts in business models, changes in supply chain management, and new notions of ownership. Also, to fit a circular economy, products require redesign (e.g. to be more easily upgradable) and additional systemic components (e.g. take-back services) – which in turn raises the question how consumers perceive and appreciate the new value proposition.

[6] : For example 'Chemistry and physics: Fundamental for our future. Vision paper 2025', http://www.nwo.nl/en/news-and-events/news/2013/cw/vision-document-chemistry-and-physics-in-2025-presented.html

- **Based on your national experience, what would be the three most important measures to be adopted at EU level in order to promote the circular economy? Please be specific**

Frontrunner Policy Framework at the European level should be introduced, adaptable to the state-of-play in individual European countries (from linear to circular), creating room for cross-sectoral innovation ecosystems and best-performing approaches. This means a ‘different speed’ resource approach which can be established within different EU programs (f.e. Cohesion Funds) and directives (f.e. Ecodesign) to create stepping stones for accelerated system innovations and exploit ‘systemic comparative advantages’ within Europe.

General pre-conditions for a ‘different speed’ resource approach are:

- *Innovation enabling policies and legislation*: To provide more opportunities for accelerated growth of new business models and markets, policies and legislation can be more innovation friendly through 1) goal oriented regulation with technology neutrality, 2) ‘right to challenge’ norms if equal results by different means can be accomplished, 3) inclusion of experiment provisions, 4) introducing the ‘innovation principle’ when creating new policies.
- *Room within competition framework*: Cooperation between organizations and competition can be in conflict. This could hamper promising and desirable initiatives. The Netherlands therefore invites the Commission to initiate a discussion on the merits of allowing broad-based cooperation within the EU framework on competition in favour of circular business cases and sustainability in general.
- *Active involvement civil servants*: As we have learned from the Green Deal approach, the active involvement from civil servants is an important part of acceleration the transition towards a circular economy. Participation is necessary to understand and nudge dynamics within and between sectors. Such an approach at the EU-level would be most welcome, for instance in the form of EU Innovation Deals.
- *Integrated and cohesive resource knowledge infrastructure:* To actively make use of the response-adaptive nature of a circular economy (arising from its characteristics described at the top), resource related vulnerabilities within ecosystems and industries have to be transparent and transformed by (circular) practices into innovation opportunities. To achieve this the following items need to be integrated:
  - up-to-date and precise information about the resilience of ecosystems and functions and (a)biotic resource needs of industries.
  - Benchmark suitable performance information about the amount of ecosystem services provided by nature and the resource efficiency and effectivity of industries.

- Identification (real life/modelling) of feedback practices and innovative circular solutions to turn resource vulnerabilities into innovation opportunities.

  In order to exploit the potential of a circular economy to address the challenges, the Netherlands invites the Commission to develop state of the art European intelligence on resources by integrating available data and knowledge of the domains mentioned.
- *Governance, indicators and intelligence:* A successful transition towards a circular economy will be the cumulative result of ongoing initiatives of society as whole, including all levels governments, civil society and business. Its progress will benefit from appropriate governance requirements that assess the contribution of existing and future policies and monitor the progress in the EU as a whole, in terms of quantitative and qualitative objectives and dashboard of indicators. Such a governance system should be integrated with a sophisticated EU intelligence infrastructure that allows full exploitation of a circular economy to address the challenges of resource security and play an important part in strengthening the EU's competitive position. Such an infrastructure should integrate available data and knowledge on resource security, resource efficiency, possibilities for feedbacks, biobased economy, and natural capital.

<u>Linear economy without feedback</u>:
- *Laggards*: gradually implemented landfill ban and implement waste acquis.
- *Followers*: Criteria for energy recovery combined with support for industrial symbiotic waste incineration. To ensure enough scale, the accompanying obligation could be to set up bilateral cooperation with laggards for technical transfer and the creation of business ventures. Furthermore international standardisation of environmental- and waste legislations helps to capture 'economies of scale'.
- *Frontrunners*: Innovation funds turning landfills into urban mines. To ensure enough scale the accompanying obligation could be to set up bilateral cooperation with followers for technical transfer and the creation of business ventures. Information and advice networks for and by frontrunner partners.

<u>Linear economy with feedback:</u>
- *Laggards*: Toprunner approach within Ecodesign (extended to all products), letting the speed of the markets raise *base line* quality standards.

  Followers: The aim is to create more biobased and circular products, stimulated with a Toprunner approach of the Ecodesign aiming for a 'race to the top'. This means introducing dynamic standards, both by setting progressively changing minimum performance standards, as well as by setting standards for preferred high achievers.

  A specific topic that should be addressed within in the bioeconomy strategy and the circular economy package is food waste and losses. From a perspective of circular (bio) economy it is important that resources from the food supply chain,

which do not reach the consumers in the first processing of food are not considered as waste in relation to the Waste Framework Directive. Reason for this is that they can still be efficiently used in animal feed, composting or the creation of biobased materials or energy, provided there is no risk for human or animal health or the environment. The new circular economy package and the bioeconomy strategy could address the reduction of food waste by reaching a consensus that the principal objective must be to prevent the creation of 'secondary resources' (food losses and waste) from the food supply chain, and making as much use as possible of the unavoidable secondary resources in the food supply chain. A framework could be created to ensure that all EU Member States can map the mass balance of all flows in the food supply chain in a uniform manner. The FUSIONS 'Food Waste Quantification' document could provide a basis for this, in which is explained how the various elements of this mass balance can be filled in uniformly throughout Europe (http://www.eu-fusions.org/index.php/publications)[7].

- *Frontrunners: Frontrunners*: Installing a EU platform helping companies to overcome regulatory obstacle (f.e. providing assistance with 'right to challenge' of consolidated norms).

  A necessary precondition is to understand the legal status of the secondary resources: Are these resources product or waste? In legal terms waste - as described in the European Waste Framework Directive - is any substance or object which the holder discards, intends or is required to discard. Remarkably the Waste Framework Directive does not hold a definition of the word 'to discard'. As a consequence the distinction between product and waste remains highly unpredictable. Within a circular economy with activities as reuse, repair and refurbishment, the status of a material or product should be clear and in line with the ambition of resource efficiency and environmental protection. Especially the lack of a definition of the key element in the definition of waste - the word 'to discard' - leads to a situation where there is no legal certainty for investments in circular economy initiatives, and where there is no level playing field between Member States. Therefore, The Netherlands sees great value in further clarification of the term 'to discard', and proposes a definition which exempts cases that fulfil

[7] : See http://www.eu-fusions.org/index.php/publications. The FUSIONS project also published a report "Review of EU legislation and policies with implications on food waste"(15 June 2015), in order to examine opportunities for the reduction of food waste (see previous URL). Within the scope of the circular economy package this could be further examined leading to concrete suggestions of amending EU legislations if this contributes to the reduction of food waste, of course without compromising on food safety and animal health. In this regard the Netherlands would point at the appeal of the Agricultural Council in May 2014 to extent the list of products, which have a long shelf life and retain their quality for a very long time, that could be exempted from the requirement for a 'best before' date on the label (extension of Annex X of EU Regulation 1169/2011).

the conditions to protect human health and the environment and to improve the efficient use of resources (in line with the aim of the Waste Framework Directive)[8]. Also, a narrow definition of secondary resources in legal frameworks like “secondary resources are waste materials” should be avoided (see the introduction of chapter 5 of the second consultation).

Other appropriate policy measures are stimulating and facilitating (downward)cascading of products and materials as indicated in our submitted ‘Public consultation on the Circular Economy’ (see attachment 3).

Based on the experiences, the Netherlands further proposes to address green procurement (circular, biobased and energy efficient) in the forthcoming CE-action plan in the following way:

- Integrate green procurement in the existing green public procurement program.
- Support pilots for green procurement, by funding, guidelines and tools.
- Share best practices about green procurement and new business models.
- Focus on learning and development for Europe (frontrunners, followers and laggards), not only on quick results for frontrunners.
- Choose for the pragmatic approach: learning by doing. Analyse pilots and experiments to support the systematic and academic approach, not the other way around.
- Support countries with tools and training to make steps forward with green procurement.
- Develop a system to support different phases of green procurement policy development within the EU.
- Integrate green in the criteria documents for SPP for relevant product groups according to the latest market developments.
- Include social/ethical aspects in green public procurement.
- Demanding procurement contractors to come forward with the most sustainable solutions, not only for the short term, but also for the period characterized by maintenance (for instance energy-efficiency) and finally end-of life (for instants re-use).

<u>Circular (bio)economy:</u>

- *Only a frontrunners oriented policy framework*:
- The circular economy and sustainability initiatives may require organizations to work together to have the desired cross-sectoral and cross-resources effects. Therefore we propose a EU Circular Economy Challenge as described below.

- *Scope:*

[8] : Further elaboration of this suggestions can be found in the non-paper – “NL suggestions for the Commission’s revision of the Waste package - the concept of ‘waste’” (see attachment 2).

- EU societal resource challenges, touching 1 billion people worldwide, should be central. For example ‘sustainable nutrition’, ‘nature-industry symbiosis’, ‘living within known planetary boundaries’.
- Base-line: The solutions have to create 1st, 2nd and 3rd order positive external effects (f.e. less use, positive rebound-effect, self-perpetuation of business model).
- Create a call with no budget attached to ask member states what the biggest transitions are the EU has to go through, what kind of networks are needed and what roles the different partners within those networks need to play. In this way relevant actors become known.

- *Thresholds:*
  - Coalitions of companies, governments, knowledge centres, societal parties AND groups of willing consumers are mandatory. For governments this means setting up transition teams or scouting team to actively participate in tackling the EU resource challenge.
  - Global consortia have to be able to join.
  - Parties should be committed to high levels of transparency.
  - The selected coalition(s) agree through sustainable procurement to buy the developed solutions themselves.

- *Legal framework*:
  - Experimental zone with a sunset-clause of 4 years, in which sectoral norms can be temporarily suspended after an integrated risk assessment (“yes, if”).
  - Mutual recognition between participating member states in case higher standards being met concerning public risks. An example is the North Sea Roundabout.
  - Automatic recognition within participating member states of the developed solutions if accomplished scrutiny standards are the same of higher within a country. This speeds up market-entry of the developed solutions. Lessons can be learned from regional interstate cooperation (e.g. art 11 of Regulation (EU) no. 1143/2014 on invasive alien species).
  - High level steering from the European Commission

- *Integrated risk assessment:*
  - The necessary cross-sectoral risk analysis will be conducted by the European Commission and will form a learning project within the Better Regulation initiative. The costs for the cross-sectoral risk analysis can be (partly) deducted from the designated budget. An example is the Dutch law ‘Wind energy at sea’.
  - Within the project, new detection and screening methods should be developed if non-existent, turned into monitoring protocols implementable for small entrepreneurs and made public. The EU recognition of monitoring organisations (e.g. art 8 of Regulation (EU) no. 995/2010 (Timber regulation)

can be inspirational on how to organize the recognition of the monitoring protocols.

- Through the program Green Public Procurement the conducted cross-sectoral risk-analysis will be made publicly available and suitable for governments to integrate in their procurement procedures.

- *Policy development*:

  World class knowledge centres create an upward cascading policy ladder and deduce important knowledge questions which could be taken up by Horizon 2020. An illustrative opportunity in this regard can be found within the development towards a sustainable agriculture is the possibility of upward cycling of fertilizer products from waste of livestock manure. This possibility is currently lacking in European regulation. A framework to make this possible could be created in the Nitrate Directive, Waste, Fertilizer and Animal by-product regulation.

  - Learning journey on what a cross-sectoral certification scheme could look like based on the practices of the participating frontrunners.
  - Transferring the lessons-learned and developed solution into directives such as Ecodesign (article15, lid 6), adding them to the BREV's potential technology list, informing the course of the Eco-innovation program, identifying chances within the Cohesion funds etc.
  - Promoting transparency and accountability of land use programmes and areas, to provide assurance to landowners, investors, businesses and others, that will drive a best practice approach, will encourage businesses to become involved, and that will help to attract new and additional funding for sustainable land use. The Netherlands, to this end, supports the development and implementation of the Verified Conservational Areas Register (VCA, see http://v-c-a.org/) that registers both protected and productive areas for which ecological ambitions have been formulated.
  - Collecting ideas for innovative consumer responsibility schemes by means of competions to learn how consumers becoming 'prosumers' can be part of systemic solutions.

Part 2 – Waste

- **Definition of municipal waste**

Since the beginning of the 1990s Eurostat has been collecting annual data from MS on the generation and treatment of municipal solid waste on the basis of a questionnaire developed by the OECD and Eurostat. Member States report annually to Eurostat on MSW generated and on the type of treatment applied. Clear guidance is provided by Eurostat on how to report MSW generated and treatment.

In order to ensure a better harmonization of the calculation method and its alignment to the OECD/Eurostat approach, the Commission proposed in its previous legislative proposal to include in the Waste Framework Directive a definition of 'municipal waste' aligned with the existing OECD/Eurostat definition and covering "household waste and other waste from retail, trade, small businesses, office buildings and institutions similar in nature and composition".

Based on the input and reactions from both stakeholders and the Member States delegations during Council discussions the following questions have arisen:

- Should the definition remain neutral as to who is responsible for collection/management of the targeted waste stream (e.g. municipalities or private actors)?
- To what extent should the definition include waste from retail, trade, small businesses, office buildings and institutions that is similar in nature and composition to household waste? Would a quantitative criterion be useful?
- Is there a need to establish a clearer link between the OECD/Eurostat definition and the list of waste codes as specified in Commission Regulation (EU) 849/2010?

- **What are your views on these issues?**

  First of all it is important that the definition remains neutral as to who is responsible for the collection of the waste. Member States' data must be comparable.
  In the Netherlands we focus on Municipal Waste from Households with an ambitious target of 75% waste separation (at source or after collection) in 2020. In order to reach this goal it is also important to focus on material chains such as biowaste, plastics and paper. An advantage of the approach of focusing on specific material chains is that all parties in the value chain are stimulated to establish a common approach for the entire chain, including the waste phase. In our view there is no specific need for a clearer link with Commission Regulation (EU) 849/2010.

- **Do you have any additional technical suggestions to improve the definition proposed by the Commission in 2014?**

  The Netherlands prefers a definition for Household waste instead of Municipal waste.

A suggestion is to focus also on the quantity of waste that cannot be recycled after separation (residual waste). This seems only to make sense if you can use a kg/person target for Household waste. If this target is used for a broader waste stream from both households and retail and small businesses, it is not comparable (and representative) anymore, since it depends on the specific municipality and its economy if it has more or less retail and small businesses in relation to the amount of inhabitants.

Therefore, a kg/inhabitant target seems only to make sense if used for Household waste. An advantage of this approach is that you focus on one of the main purposes of waste policies, to improve resource efficiency. Having high recycling rates is positive, but does not guarantee that a Member State has little residual waste and focuses on prevention. On the other hand, having lower recycling rates does not necessarily mean that a Member State is incinerating more waste, than a member state with higher recycling rates. E.g. when 30% of 300kg is recycled it results in 210 kg residual waste which exits the value chain and is (ideally) incinerated with energy recovery. When 50% of 700kg is recycled, the result is an amount of 350kg residual waste that exits the value chain.

The overall goal is to minimize the amount of material that 'leaves' the economy. Therefore we also should focus on the amount of residual waste. This amount has to be reduced, which can only be achieved by increasing both prevention and recycling. A kg/habitant target (like 100 kg residual household waste) is suggested as an approach to focus on both prevention and recycling.

- **Calculation method**

According to existing rules, the amount of recycled waste -to be reported with a view of compliance with the targets for municipal and packaging waste is defined as the "input into a final recycling process" (WFD) or an 'effective' recycling process (Packaging and Packaging Waste Directive - PPWD). Member States may also report as "recycled" what is separately collected (in the case of the WFD) or the output from the sorting plants (in the case of both the WFD and the PPWD) as long as there are no "significant losses".

In the Commission's view, these rules need to be further clarified in order to ensure a more uniform implementation and comparability across the EU, while avoiding potential misinterpretation, or abuses (e.g. waste that is landfilled or incinerated being reported as recycled).

In this context, the Commission would like to enquire with the Member States on the following:

- **At what stage in the waste management process do you measure quantities to be reported as recycled / prepared for re-use? Does this measurement point vary**

depending on the waste fraction or material stream? If the measurement takes place before waste reaches the final recycler, how do you ensure that "significant losses" do not occur after measurement?

Input in the recycling process defines the quantity of recycled material despite possible losses in the process to a final secondary resource. Because “significant losses” has not been specified, it is not taken into account.

- **What is the approximate share of municipal and packaging waste generated in your country sent to a final recycler located in another MS? What is the approximate share sent to a final recycler located in another MS outside the EU?**

  Unknown.

- **In your view, what would be the most appropriate single point of measurement to obtain reliable and comparable data while limiting administrative burden (e.g. output of first sorting operation, output of last sorting operation, input to the final recycler, etc.)? Please motivate your choice.**

  At this moment it is, due to the current monitoring, hard to define exactly which share of waste streams can be recycled. The exact amount of losses in the waste management process are unknown. It seems that while setting targets in the past, the idea was that waste streams can be recycled for 100%. But the amount that can be recycled using the best available technologies at the moment is unknown and certainly not 100% for all waste streams.

  So, first of all, an assessment is needed to define a baseline for the recycling rates of the different waste streams in the EU at the moment, to know the share of the waste that is used as recycled material in products.
  Besides that it is important to know which improvements in waste management can be achieved in the near future to improve the recycling rate.

  In the end, when choosing a method, it is important that it is a very clear and practical method.

- **Incentivising re-use**

Some Member States as well as some stakeholders called for concrete actions to incentivise/reward Member States' efforts on re-use. While a specific target for re-use would be difficult to set at this stage due to unavailability of data and methodological gaps, alternative ways of incentivising/rewarding re-use might be considered as long as reliable data is available.

- **Would you agree that additional actions are needed to favour re-use? If yes, what actions do you see as most appropriate at EU level?**

- Re-use should not be discouraged due to the ambition to recycle products that could be re-used. Being the second step of the waste hierarchy, re-use should be facilitated as much as possible. As an example we would like to mention second life electric vehicle batteries. Directive 2006/66/EC on batteries describes that waste batteries have to be recycled. But this directive should, in line with the waste hierarchy, first allow and point at preparation for re-use of batteries that have become waste.

  Innovative technology enables the re-use of car-batteries that are no longer suitable for their original purpose for other purposes (temporary storage of excess renewable energy). Thus the batteries have a ‘second life use’ before being recycled. However, since re-use does not contribute directly to the realization of the recycling targets, and because of the requirement set in Directive 2006/66/EC on batteries, the original producer is not stimulated to put the batteries on the market for re-use.

- Another issue that has been raised before in this consultation which also touches the problem described above has to do with the question if such a battery when it comes at the end of its lifecycle as battery for use in an electric car, is then discarded, or not? Even when its certain that this battery will be re-used for storage of energy in stationary storage applications?

  The Waste Framework Directive and present case-law do not provide for the ultimate test. Following the Arco-judgment we can say with certainty that the fact that the battery is still valuable, does not mean that this battery is excluded from the concept of waste. But when this battery is given a second life, does this mean that this battery has been discarded, or not?

  Normally a used battery should be tested, cleaned and maybe repaired or reassembled before re-use. Do we automatically have to qualify these actions as 'preparing for re-use' as defined in the Waste Framework Directive? When this is true, these actions would then qualify as waste recovery actions.

  One of the basics of waste law is that waste can cease to be waste after a complete recovery operation. The question now is: when a used car battery is tested and reassembled, is this battery then end of waste, thus no longer waste? Is the integration of this battery in a stationary storage system then re-use of a non-waste second life battery? Again: following the more common sense approach of the European Court of Justice and the Dutch council of state we believe that these types of circular economy initiatives could be stimulated without need to apply the requirements of the European Waste Shipment Regulation. In other words: what would be the environmental need to consider this second life battery as waste? The Waste Framework Directive itself however offers only little guidance how these initiatives should be tested in case by case situations.
  So, the lack of a definition , especially the lack of a definition of the key element in the definition of waste - the word 'to discard' – makes it difficult to make a distinction

between waste or product (non-waste). By defining ‘discard’ as explained in the added non-paper, reuse could be stimulated.

In all, the EU waste policy should encourage the possibility to re-use goods once they have become waste. Legal clarity will ensure that reusable products, characterized as waste, are not viewed as taken off the market just because of their legal status.

- Another example are wood pallets and their re-use instead of recycling. We might focus too much on recycling and the recycling goals instead of taking into account and recognize re-use which is on a higher level of the waste hierarchy.

- At this moment Extended Producer Responsibility (EPR) rarely supports preparation for re-use where you would expect that it should do if we look to the overall goal of EPR.

Additional instruments can be developed with which producers can analyze whether there is business in remanufacturing, refurbishment and reuse of their products. For example a methodology for measuring preparation for re-use could be developed in combination with separate quantitative targets for preparation for re-use away from recycling and increasing the diversion of re-usable products from the waste stream. Furthermore could be looked into the possibility to use EPR schemes for safeguarding the potential re-use of products in their entire logistic chain.

- **What would be the key waste streams for which it would make sense to incentive re-use? Are national data available on these streams? If yes, please provide recent statistics on the re-use streams in your Member State.**

  No key waste streams, in practice most on vehicles (and parts), medical equipment and copying equipment.

- **In your view, should re-use streams for which reliable data is available be accounted for and rewarded under the existing recycling and preparation for re-use targets?**

  Should be accounted for but not together with recycling. Re-use has to be accounted separately since it is on a higher level of the waste hierarchy.

- **Minimum requirements on Extended Producer Responsibility (EPR)**

In the withdrawn proposal, the Commission also proposed to include a new annex (Annex 7) with a list of minimum mandatory requirements on EPR. The aim of this proposal was to improve the cost efficiency and transparency of EPR systems which currently differ significantly across the EU. However, some Member States and stakeholders expressed concerns as to the level of detail of these requirements and the need to adapt existing schemes.

- **Based on your national experience, what are the key conditions to improve the cost efficiency and functioning of the EPR schemes?**

  Key condition for improvement of EPR is transparency which can be stimulated by competition between the schemes. More transparency should lead to improved schemes where real individual costs can be allocated to specific producers and their own products and could be linked to the design of products. In that way there will also be a financial incentive for reuse and high quality recycling.

  And in order to create a level playing field and transparency, and a minimum level of recycling (high standard), recyclers (waste management operators) have to be certified (e.g. Weelabex for E-Waste). Besides that, recyclers are, if certified, allowed to operate independent from a scheme to create competition. This structure is a good example for other EPR schemes. This certification can also be reviewed when high value recycling is possible.

  Another possibility is to prescribe the use of recycled materials in the products. This prescription should not cannibalize the reuse of products .

- **Do you see the need for a differentiated approach depending on the waste stream concerned?**

  Yes, depending on value of the waste. General principles can be the same, but specific measures have to be differentiated. Recyclers should be allowed to collect waste themselves, in order to make a profit. All within the frames of an obliged minimum standard for recycling and registration of the volumes involved.

  Furthermore EPR could be more than a waste collection scheme. It can be a major instrument in supporting implementation of the waste hierarchy. To ensure this, the Netherlands suggests the Commission to further develop EPR taking in account the whole circle including waste prevention, reuse and recycling, thereby taking into consideration possible market effects and costs of implementation. This could integrate circular design principles to facilitate new business models, minimize the environmental footprint of products, minimize the waste residue and optimize waste treatment. To this extent, further development of EPR would be more appropriate in the context of a renewed European Product Policy instead of within the Waste Framework Directive.

Attachment 1: Further proposals for a new circular economy package

Attachment 2: NL suggestions for the Commission's revision of the Waste package - the concept of 'waste

Attachment 3: NL response to Consultation 2 on Waste Markets

Attachment 4: Reduction of Food Waste – Dutch position paper

Attachment 5: FUSIONS 'Food Waste Quantification' document

The FUSIONS project just published a report "Review of EU legislation and policies with implications on food waste"(15 June 2015), in order to examine opportunities for the reduction of food waste (enclosed). Within the scope of the circular economy package this could be further examined leading to concrete suggestions of amending EU legislations if this contributes to the reduction of food waste, of course without compromising on food safety and animal health. In this regard the Netherlands would point at the appeal of the Agricultural Council in May 2014 to extent the list of products, which have a long shelf life and retain their quality for a very long time, that could be exempted from the requirement for a 'best before' date on the label (extension of Annex X of EU Regulation 1169/2011).